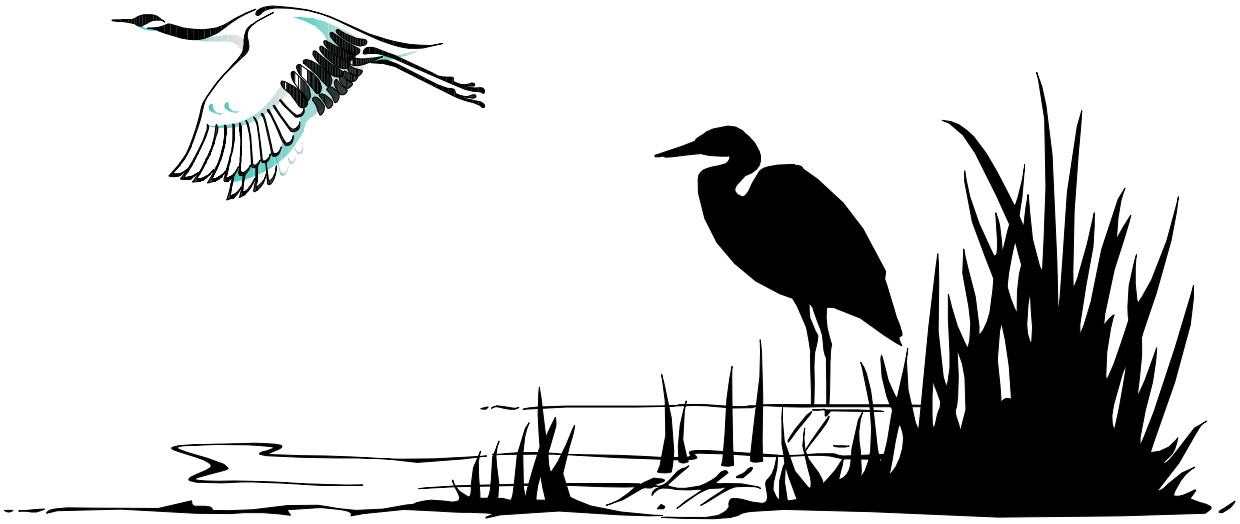
Investigation of Probable Causes for Fish Kills in Little Lick Creek, Blackford County, Indiana



by
Roseann A. Hirschinger, Environmental Scientist

Compilation and development of the final report was the primary responsibility of the Surveys Section
Arthur C. Garceau, Surveys Section Chief

Indiana Department of Environmental Management
Office of Water Management
Assessment Branch
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December 1999
IDEM/32/02/031/1999

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Abstract

Fish kills in Little Lick Creek at Hartford City have occurred seven times in the past 15 years, most recently on June 29, 1999. Surveys Section undertook a special project to determine the causes by studying past and present conditions and monitoring water quality. Field data were collected on four occasions using multi-parameter instruments measuring dissolved oxygen, temperature, pH, specific conductivity, and turbidity. In late September, 1999, anoxic conditions were recorded for a seven-day period at one sampling site. Septic conditions were observed by staff throughout the stream reach downstream from Hartford Packing Co. Inc. wastewater land application site two days after the recorded data ended. Analysis of surface water samples showed highly elevated levels of ammonia-N, $CBOD_5$, and suspended solids. Evidence of gross pollution and land application permit violations were reported to the IDEM Office of Enforcement with recommendations for corrective actions.

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Acknowledgments
The following staff from the Surveys Section made contributions to the planning, data collection, and field activities involved in this study: Art Garceau, Steve Boswell, and Ryan McDuffee. Thanks are also extended to Brian Smith of the Office of Land Quality, Emergency Response Section, Terry Ressler of the Office of Enforcement, and Jon Ware of the Office of Land Quality, Land Application Section for providing background information, file materials and for generously giving guidance on this project.

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INTRODUCTION

BACKGROUND

Fish kills in Little Lick Creek at Hartford City have concerned the IDEM Office of Water Management (OWM) for several years. The Surveys Section received a request from the Office of Enforcement (OE) to investigate the causes of water quality violations contributing to fish kills in Little Lick Creek. The Emergency Response Section (ER) of the Office of Land Quality has records of fish kills reported in Little Lick Creek prior to 1999, on the following dates:

September 24, 1998	July 18, 1994
July 31, 1996	August 25, 1990
July 3, 1996	September 25, 1985

All of these incidents were attributed to sewage spills, and were investigated and documented as singular events. Conditions in the stream were not documented prior to, or in the weeks following the incidents. All of the fish kills were attributed to low dissolved oxygen related to the sewage spills, along with low flow conditions and a large amount of algae and aquatic plants.

HARTFORD CITY MUNICIPAL CSO DISCHARGE

Hartford City Wastewater Utility has 17 permitted Combined Sewer Overflows (CSOs) and is required to file a Stream Reach Characterization and Evaluation Report by November 20, 1999, to the Urban Wet Weather Group in the Permits Section (IDEM 1997). Monthly reports of CSO activity are submitted by the utility, but they do not contain enough information to determine the organic loadings that the waterbodies undergo during wet weather. These reports consist of rainfall reports and an estimate of CSO duration which is only reported as starting at 7:00 AM one day and stopping at 7:00 AM the next day (Appendix 1). The influence of the CSOs and dry weather bypasses have been blamed for the eutrophic and septic conditions of the stream in the past.

HARTFORD PACKING CO. DISCHARGE

Hartford Packing Company has a controlled discharge NPDES permit issued in 1988 (IDEM 1988) which allows them to empty their process water lagoons into Little Lick Creek from December 1 to April 30, while limiting the discharge to 1/3 of the upstream flow. Changes in the location of the outfall created a situation which brought Hartford Packing Company to the attention of the Office of Enforcement concerning the discharge of non-contact cooling water during the summer (IDEM 1989). In 1996, a land application permit was issued to Hartford Packing allowing them to land apply wastewater from their lagoons to a field adjacent to the stream (IDEM 1996).

According to a September 25, 1998, memorandum, an inspection of the land application site

revealed two broken places in the drainage tile system which caused soil erosion. The operator had filled the resulting holes, but had not repaired the tiles.

The OWM Compliance and Permitting Branch completed a draft permit on September 21, 1999, to replace Hartford Packing's 1988 NPDES permit (IDEM 1999b). Standard language was used, allowing 36 months after the permit was finalized to meet final discharge limitations. On August 25, 1999, a Notice of Violation of the 1988 permit (IDEM 1999c) was issued by the Office of Enforcement. This notice addressed a non-permitted discharge from the lagoon on June 26, 1999, which caused a fish kill (IDEM 1999d).

METHODS AND MATERIALS

The objective of the Surveys Section investigation was to characterize the stream during normal conditions and to evaluate the effect of wet weather influences on the stream. This information will aid in determining the cause of the fish kills.

SITE SELECTION

Surveys Section staff visited Hartford City on March 19, 1999. Richard Rice of the wastewater utility showed staff different reaches of the creek including the industrial areas. Mention was made of local industries which discharge to the treatment plant, but no mention was made of Hartford Packing's lagoon. The heavy growth of coontail observed in the creek during the September 24, 1998, fish kill investigation was no longer present. The stream reach from SR 26 downstream to the city park at SR 3 had very little velocity and was running within three feet of the top of the bank. At the time of this visit, agricultural and industrial run-off were considered as sources of nutrients which increase algal and plant growth, causing problems with dissolved oxygen levels in the stream.

A sampling plan was designed to compare water quality before and after rainfall during the driest season of August and September in an effort to record the effects of the CSOs and run-off in the stream reach from CR 200 E to the confluence with Big Lick Creek, upstream of the Hartford City Wastewater Treatment Plant (WWTP) discharge (Boswell 1999).

The sites chosen were:

- #1 CR 200 E, upstream from Hartford City
- #2 SR 26 Bridge, adjacent to the non-contact cooling water /NPDES outfall, downstream of Hartford Packing Land Application site
- #3 SR 3 Bridge, downstream of Wastewater utility lift station, in the area of all the reported fish kills, later changed to Monroe Street, two blocks north
- #4 Behind Hartford City WWTP, upstream of the confluence with Big Lick Creek.

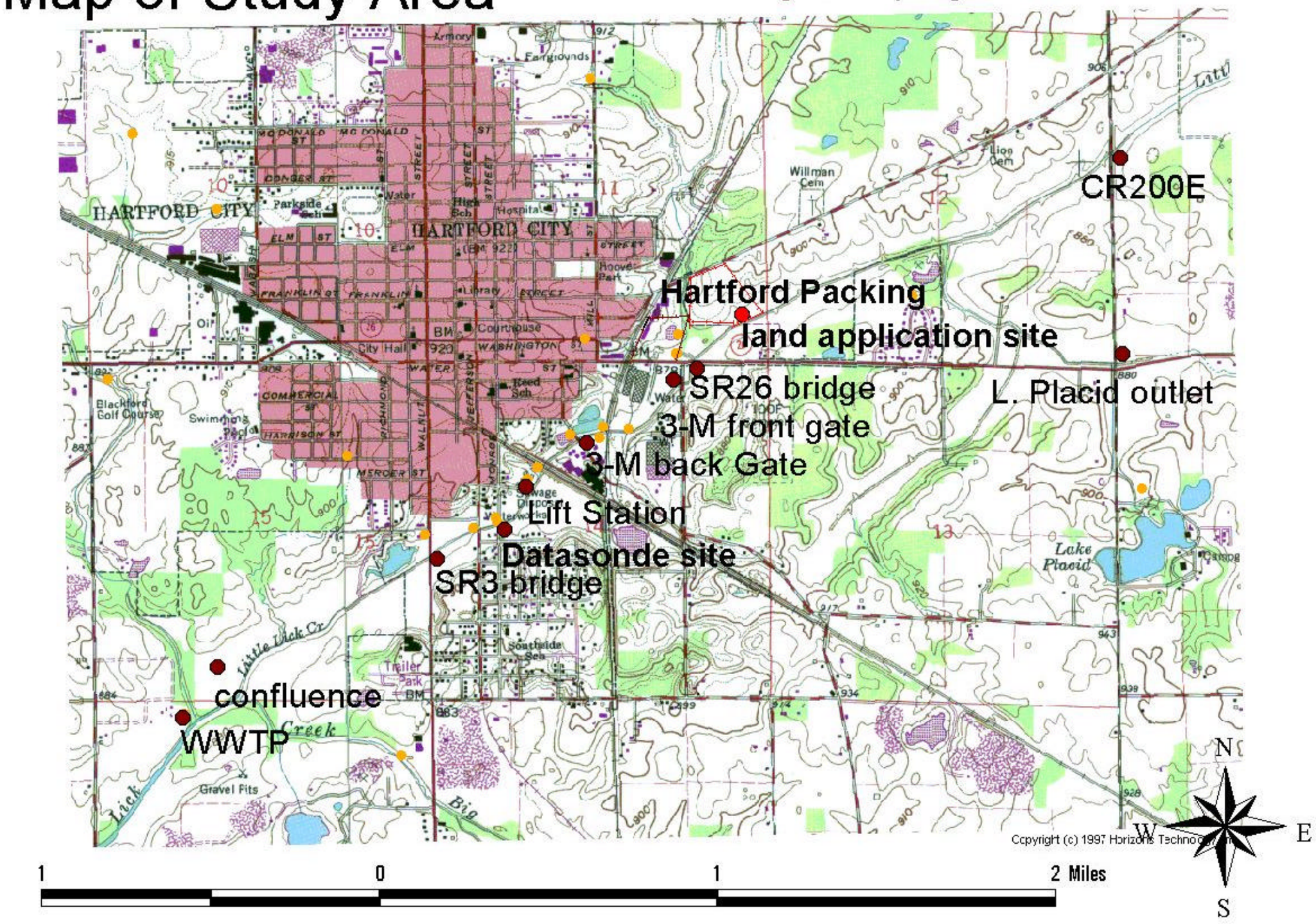
These sites were used on the August survey, but more sites were visited during the subsequent trips because pollution was present and the source was not known. All sites are identified by name on Figure 1.

EQUIPMENT AND TESTING PROCEDURES

The Hydrolab Datasonde Series 4a water quality instrument is designed to be used in fresh, salt or polluted water to measure and record multiple parameters simultaneously including: temperature, pH, specific conductivity, and dissolved oxygen (DO). The Datasonde 4a is designed for in-situ and flow-through applications. It is built around a common set of reliable, field-replaceable sensors and electronic components in a rugged, non-corrosive housing. It can be programmed to record up to 55,000 readings and to print out at a computer. It is used in the field to create a continuous record. A Hydrolab equipped with a Scout Monitor was also used to obtain field data on site.

Laboratory tests were conducted on the samples by Test America, Indianapolis, Indiana, under contract to IDEM.
Field analysis and sampling procedure were conducted in accordance with Surveys Section SOP Manual (Beckman and Hall 1998).

figure 1
Map of Study Area



RESULTS AND DISCUSSION

AUGUST 12-13 SAMPLING EVENT

In accordance with the sampling plan, staff visited the area again on August 12 and 13, 1999, to monitor the effects of rainfall and combined sewer overflows into Little Lick Creek. Field measurements and water samples were collected on August 12 in dry conditions before a rain event. Water samples were taken again the following day, August 13, after an overnight 1½ inch rainfall event.

Table 1 lists field data and the results of ammonia analysis for the sampling event. Also shown are the calculated allowable ammonia (NH3-N) and Water Quality Standards (WQS) as cited in 327 IAC 2-1-6 (IDEM 1998b). Violations of WQS are emphasized in **bold print**.

Table 1 Stream Conditions during August 12 - 13 Sampling Event

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DO mg/L	Temp.	pH	Sp. Cond	Total NH3-N mg/L	Total NH3-N mg/L	WQS NH3-N unionized	Calculated Total NH3-N allowed
Site I.D.	% sat	°C	SU	us/cm	8/12/99	8/13/99	mg/L[a]	mg/L[a]
#1@ CR 200E U/S	8.6 106%	24.3	8.62	644	**1.6**	**0.24**	0.2137 acute 0.0294 24 hr	1.76 acute **0.2421 24 hr**
#2@ SR 26 Bridge	6.2 76%	21.0	7.73	3220	0.37	0.19	0.178 acute 0.0242 24 hr	7.93 acute 1.07 24 hr
#3@ SR 3	11.7	24.5	8.4	866	**0.59**	0.19	0.2137 acute 0.0294 24 hr	1.76 acute **0.2421 24 hr**
#4@ conf. with Big Lick Creek	8.65	24.5	8.45	981	0.15	**0.43**	0.2137 acute 0.0294 24 hr	1.76 acute **0.2421 24 hr**

[a] From 327 IAC 2-1-6 (b)(5) (B) (IDEM 1998b):

To calculate total ammonia, divide the unionized concentration reported by the value determined by: $1/(10^{pka-pH}+1)$.

Where: pka = 0.09018 + (2729.92/(T+273.2))

pH = pH of water

T = °C

The WQS criteria establishes levels of un-ionized ammonia (NH3-N) which must not be exceeded by specifying maximums and 24 hour averages which protect aquatic life. The un-ionized portion of the total ammonia changes as pH and temperature changes. This is the reason higher amounts of ammonia in permitted outfalls are allowed in the winter than the summer. High ammonia levels also deplete dissolved oxygen in surface water, and dissolved oxygen levels can be much higher in cold water than in warm water.

SEPTEMBER 28 SAMPLING EVENT

Dry conditions continued through September. In response to predicted rainfall, Surveys Section staff traveled to Hartford City on September 28, 1999, to place a Hydrolab Datasonde in Little Lick Creek at Site #3, about 0.1 mile downstream of the main lift station at Monroe Street. The intention was to record the effects of the lift station CSO on water quality in Little Lick Creek. The bypass was expected to lower dissolved oxygen in the long, pooled stretch of Little Lick Creek. Upon arrival, the water in the stream was black, which was not expected. The weather had been dry, and the CSOs had not discharged since August 18. Water quality was observed to be very poor at the site, and exhibited every sign of having been that way for quite some time. Investigation upstream of the Hartford Packing's non-contact cooling water outfall could not be made that day because of time constraints. Field data obtained from observed sites are summarized in Table 2.

Table 2 Stream Conditions during September 28, 1999 Sampling Event

Site I.D.	D.O. mg/L% sat	Temp. °C	pH SU	Sp. Cond us/cm	Comments
Drain from Lake Placid	15.4 193%	24.6	8.38	1650	This drains the Lake Placid Camp Grounds and STP. The flow converges U/S of Hartford Packing. Observed 2:22pm.
Hartford Packing Co. non-contact cooling water	5.28 70%	28.71	7.69	964	Operator M. Tatman reported 0.4 MGD flow. Observed 12:55pm.
#2@ SR 26 Bridge	4.91 64.8%	28.9	7.72	1084	The pool was dark gray to black, growth on rocks and sludge like sediments. Observed 12:45pm.
#3@ Monroe Street Bridge, 2 blocks U/S SR 3 Bridge - Datasonde Location	**0.26–3.5%**	20.12	7.71	1287	The first street below the lift station, two dead fish, one a 12" carp. Observed 1:55pm.

The Datasonde was placed at Site # 3 and was set to begin taking readings at 2:00 pm. Field data was recorded every 15 minutes until noon on October 4, 1999.

The Hydrolab and Datasonde both were calibrated in the laboratory on the morning of September 28, 1999. The Hydrolab was post calibrated upon return from the field and the Datasonde calibration was checked on October 7, 1999. The dissolved oxygen calibration had drifted downwards 0.15 mg/L, an acceptable amount for the seven days of readings.

The most notable information collected was that the stream had virtually no dissolved oxygen for the entire week. Between 5:30 AM and 7:00 AM on September 29, after a 2 inch rainfall, dissolved oxygen rose to a maximum of 2.65 mg/L at 6:30 AM and was zero again by 7:15 AM (Appendix II). Dissolved oxygen at concentrations below 4.0 mg/L is a water quality

violation under 327 IAC 2-1-6 (b) (3) (IDEM 1998b, p 14).

OCTOBER 6 SAMPLING EVENT

Recovery of the Datasonde took place on October 6, 1999. Staff arrived at the Monroe Street bridge to find septic conditions, 14 dead fish and 2 dead bull frogs. Throughout the day, different sites were visited both upstream and downstream of Hartford Packing.

A discharge of strong sewage was located on the stream side of Hartford Packing's land application site. Spray irrigators were operating on this date. The spray irrigation had saturated the ground, evident by pooling in some areas. The area being used for land application is tiled and quite steeply sloped. The tile was discharging the wastewater directly into Little Lick Creek. Table 3 contains field data collected on October 6, 1999. Also shown are total volatile solids (TVS), carbonaceous biochemical oxygen demand ($CBOD_5$) and total ammonia expressed as N (NH3-N) from laboratory analysis. The Water Quality Standard (WQS) is quoted along with the calculated allowable total NH3-N (see notes with Table 1).

Violations in dissolved oxygen and ammonia are emphasized in bold print. $CBOD_5$ and TVS are emphasized because they are extremely elevated from normal surface water. The amounts of ammonia found in these samples are not only toxic to aquatic life, but create a substantial oxygen demand in addition to the $CBOD_5$. These measurements explain the septic conditions in the stream.

In addition to improper wastewater application, Hartford Packing Company had used the field to dispose of waste tomatoes, which is a solid waste. Operations reports submitted to Office of Land Quality on November 1, 1999 show the duration and amount of wastewater applied during the month of September (Appendix III). This report quantifies Hartford Packing's land application activity and indicates violations of the limitations of their permit. Their permit allows 2,750,000 gallons to be applied annually, and the monthly discharge forms indicate application of 4,200,000 gallons in September alone. Limits are also placed on the load of $CBOD_5$ and volatile solids applied on a weekly basis. $CBOD_5$ analysis indicates over-application from 227 to 1784 pounds each week on each acre of the site. The limit is 933 pounds $CBOD_5$ per acre per week.

Table 3 Stream Conditions during October 6, 1999 Sampling Event

Site I.D.	DO mg/L % sat	Temp °C	pH SU	Sp. Cond us/cm	CBOD Mg/L	TVS mg/L	Total NH3-N mg/L	WQS NH3-N unionized mg/L[a]	WQS Total NH3-N allowed mg/L[a]	Comments
#1@ CR 200E DA14414	12.5 123%	14.33	8.73	523	3	252	0.20	0.1513 acute 0.0294 24 hr	1.2337 acute 0.02397 24 hr	WQ samples taken 12:20pm
Drain for Lake Placid & STP	4.5	14.77	7.16	2840						No WQ sample collected. Observed at 12:05pm
Site 80 yds U/S of tile discharge	7.36 61.3%	16.77	7.57	982						No WQ sample collected Observed at 3:00pm
Pool at tile discharge	**0.70 8.2%**	15.85	8.26	5400						Turbidity 445 NTU. Observed at 2:40pm
tile discharge DA14416	**3.6 36%**	15.6	8.3	5900	**1500**	**2512**	**21**	.1513 acute .0294 24 hr	**4.808 acute 0.934 24 hour**	WQ samples taken at 2:50pm
#2@ SR 26 bridge DA14415	**0.57**	20.4	7.9	2410	**330**	**949**	**4.2**	0.2030 acute 0.0276 24 hr	6.45 acute **0.877 24-hr**	Riffle below Hartford Packing site. Sampled 2:05pm
3-M Front gate D/S of Site #2	**0.10–1.3%**	18.21	7.98	2060						This is the pool below Site #2 Observed at 11:55am
3-M back gate, U/S of fish kill	**0.22--2.2%**	12.24	7.77	1430						No water samples collected. Observed at 11:40am
#3@ Monroe St. Bridge DA14413	**0.19–2%**	14.02	7.44	1251	**180**	**563**	**5.8**	0.0946 0.0122	13.60 acute **1.75 24-hr**	First bridge below the lift station, called ER at 10:45am. Datasonde Location

The report mistakenly reports volatile solids as 34, which is probably the percent volatile solids, but without total solids data this number is meaningless. The value of the volatile solids in the discharge which was tested by IDEM (Table 3) would amount to about 1000 pounds per acre per week. Nitrogen application rates are limited to the pounds per acre that the crop on the field can use in the season. In September, 443 pounds per acre of total nitrogen was applied. Potassium and phosphorus were also heavily applied. Further reports are due to the Office of Land Quality on December 1, 1999, reporting land application practices in October (IDEM 1996, p 8).

CONCLUSIONS

During the first stream survey on August 12-13, 1999, conditions were fairly normal, showing a decline in most of the parameters tested after the rainfall. This is the result of dilution from the additional flow. Ammonia levels were high upstream in the very shallow reaches, exceeding Water Quality Standards, but dropped by 85% after the rainfall. Ammonia levels downstream at the confluence with Big Lick Creek rose by 65% and exceeded Water Quality Standards on the day after the rain. This could be the result of the CSOs or the effect of nutrient runoff.

The survey on October 6, 1999, particularly, the stream reach running from Hartford Packing's land application site to the Monroe Street bridge, showed that organic substances had depleted all the oxygen from the water. A nutrient source of considerable magnitude and duration had caused the water to turn black and become anoxic. Surveys Section staff determined that the most probable source was rotting tomatoes and/or packing wastes draining into the stream. A drain tile, which was found flowing directly off of the Hartford Packing land application site, was determined to be the source of the problem.

This discharge appeared to cause the septic condition found more than a mile downstream because immediately upstream of the discharge the dissolved oxygen and specific conductivity were at normal levels whereas the field data from the Datasonde printout shows the DO levels to be in violation of Water Quality Standards. The pollution was recorded for the period of September 28 to October 4 and was still present on October 6. This incident coincided with the time Hartford Packing was applying wastewater at a rate of 1,200,000 gallons per week totaling 4.2 million gallons during the month of September (Appendix III).
Test results of the tile discharge show ammonia and BOD levels typical of water from a sewage treatment plant's anaerobic digester. The flow from the tile into the stream created the conditions near the Monroe Street Bridge that looked and smelled like an open sewer, and had the chemical characteristics of a very strong sewage. The black color blocked all sunlight from the plants and algae in the stream, further inhibiting oxygen recovery. This condition would eventually kill the plants creating higher nutrient levels and leaving thick layers of sediment in the pooled stretches of the stream.

RECOMMENDATIONS

1. Because the June 1999 fish kill was attributable to an illegal discharge from Hartford Packing's lagoon and the gross pollution of Little Lick Creek in September and October 1999, Hartford Packing's land application permit should be suspended pending a review by IDEM.

2. The current site should also be cleared of solid waste, the drainage tile system plugged or removed and a berm should be built to protect the creek from any run-off.

3. The designated operator should be required to monitor and report dissolved oxygen, temperature, and pH of the stream and to test for levels of ammonia in the stream.

4. The operator should be informed of State Water Quality Standards and that permission to discharge to the waters of the State is contingent on maintaining those standards.

5. The Blackford County Health Officer and the local IDNR Conservation Officer should be encouraged to continue to visually monitor stream conditions and to call the Emergency Response Section when conditions deteriorate.

6. Because of the multiple discharges to Little Lick Creek, and its subsequent discharge into Big Lick Creek immediately upstream of the Hartford City WWTP, this watershed should be modeled for total maximum daily limits, which would allocate waste loads from each contributor, such that the stream is not continually overloaded with pollutants.

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APPENDIX I

[2]

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CSO DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD: 08 / 99 (MONTH / YEAR) NO CSO DISCHARGES OCCURRED: ☐

NAME: CITY OF HARTFORD CITY PERMIT NUMBER: 0021628

ADDRESS: 700 NORTH WALNUT STREET

CITY: HARTFORD CITY STATE: IN. ZIP CODE: 47348 TELEPHONE: ( ) 765-348-3855

Precipitation Event Date/Time:	Precipitation (In Inches):	CSO Outfall Number	Discharge Event Date	Time Discharge Begins: Specify either Actual(A) Estimate(E)	Time Discharge Stops: Specify either Actual(A) Estimate(E)
8-12-99 7:00AM	1.5	004	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	005	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	006	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	008	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	009	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	011	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-12-99 7:00AM	1.5	016	08-13-99	7:00 AM (E)	8-14-99 7:00AM (E)
8-18-99 7:00AM	.30	009	08-19-99	7:00 AM (E)	8-20-99 7:00AM (E)

Name/Title Principal Executive Officer	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)	Opal I. Lord	Date		
Mayor Opal I. Lord		Signature of Principal Executive Officer or Authorized Agent	09	09	99
Typed or Printed			Mo.	Day	Yr.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CSO DISCHARGE MONITORING REPORT (DMR)

OFFICE OF ENFORCEMENT
JUN 14 4 53 PM '99

MONITORING PERIOD: 05 99 (MONTH YEAR) NO CSO DISCHARGES OCCURRED: ☐

NAME: CITY OF HARTFORD CITY PERMIT NUMBER: 0021628

ADDRESS: 700 NORTH WALNUT STREET

CITY: HARTFORD CITY STATE: IN. ZIP CODE: 47348 TELEPHONE: ( ) 765-348-3855

Precipitation Event Date/Time:	Precipitation (In Inches):	CSO Outfall Number	Discharge Event Date	Time Discharge Begins: Specify either Actual(A) Estimate(E)	Time Discharge Stops: Specify either Actual(A) Estimate(E)
5/12/99 7:00AM	2.5	004	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(I
5/12/99 7:00AM	2.5	005	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(I
5/12/99 7:00AM	2.5	006	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(I
5/12/99 7:00AM	2.5	007	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(I
5/12/99 7:00AM	2.5	008	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(I
5/12/99 7:00AM	2.5	009	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(E
5/12/99 7:00AM	2.5	011	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(E
5/12/99 7:00AM	2.5	016	5/13/99	5/13/99 7:00AM(E)	5/15/99 7:00 AM(E
5/17/99 7:00AM	.15	008	5/18/99	5/18/99 7:00AM(E)	5/19/99 7:00 AM(E
5/17/99 7:00AM	.15	009	5/18/99	5/18/99 7:00AM(E)	5/19/99 7:00 AM(E
5/17/99 7:00AM	.15	011	5/18/99	5/18/99 7:00AM(E)	5/19/99 7:00 AM(E
5/17/99 7:00AM	.15	016	5/18/99	5/18/99 7:00AM(E)	5/19/99 7:00 AM(E
5/23/99 7:00AM	.7	005	5/24/99	5/24/99 7:00AM(E)	5/25/99 7:00 AM(E
5/23/99 7:00AM	.7	008	5/24/99	5/24/99 7:00AM(E)	5/25/99 7:00AM(E)
5/23/99 7:00AM	.7	009	5/24/99	5/24/99 7:00AM(E)	5/25/99 7:00AM(E)
5/23/99 7:00AM	.7	011	5/24/99	5/24/99 7:00AM(E)	5/25/99 7:00AM(E)
5/23/99 7:00AM	.7	016	5/24/99	5/24/99 7:00AM(E)	5/25/99 7:00AM(E)

Name/Title Principal Executive Officer

Opal Lord

Mayor Opal I. Lord

Typed or Printed

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (*Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.*)

Signature of Principal Executive Officer or Authorized Agent

Date

Mo. Day Yr

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CSO DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD: 06 / 99 (MONTH YEAR)

NO CSO DISCHARGES OCCURRED: ☐

NAME: CITY OF HARTFORD CITY   PERMIT NUMBER: 0021628

ADDRESS: 700 NORTH WALNUT STREET

CITY: HARTFORD CITY   STATE: IN.   ZIP CODE: 47348   TELEPHONE: ( ) 765-348-3855

Precipitation Event Date/Time:	Precipitation (In Inches):	CSO Outfall Number	Discharge Event Date	Time Discharge Begins: Specify either Actual(A) Estimate(E)	Time Discharge Stops: Specify either Actual(A) Estimate(E)
06/01/99 7:00	1.1	002	06/02/99	06/02/99 7:00AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	003	06/02/99	06/02/99 7:00AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	004	06/02/99	06/02/99 7:00AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	005	06/02/99	06/02/99 7:00AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	006	06/02/99	06/02/99 7:00AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	007	06/02/99	06/02/99 7:00AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	008	06/02/99	06/02/99 7:00AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	009	06/02/99	06/02/99 7:00Am(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	010	06/02/99	06/02/99 7:00 AM (E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	011	06/02/99	06/02/99 7:00 AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	012	06/02/99	06/02/99 7:00 Am(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	014	06/02/99	06/02/99 7:00 AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	015	06/02/99	06/02/99 7:00AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	016	06/02/99	06/02/99 7:00AM(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	018	06/02/99	06/02/99 7:00Am(E)	06/03/99 7:00AM(E)
06/01/99 7:00	1.1	019	06/02/99	06/02/99 7:00AM(E)	06/03/99 7:00AM(E)

Name/Title Principal Executive Officer	Certification	Signature	Date		
Mayor Opal I. Lord	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN: AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	Opal Lord, Mayor	07	13	99
Typed or Printed		Signature of Principal Executive Officer or Authorized Agent	Mo.	Day	Yr

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CSO DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD: 06 / 99 (MONTH / YEAR) NO CSO DISCHARGES OCCURRED: ☐

NAME: CITY OF HARTFORD CITY PERMIT NUMBER: 0021628

ADDRESS: 700 NORTH WALNUT STREET

CITY: HARTFORD CITY STATE: IN. ZIP CODE: 47348 TELEPHONE: ( ) 765-348-3855

Precipitation Event Date/Time:	Precipitation (In Inches):	CSO Outfall Number	Discharge Event Date	Time Discharge Begins: Specify either Actual(A) Estimate(E)	Time Discharge Stops: Specify either Actual(A) Estimate(E)
06/09/99 7:00	1.25	004	06/10/99	06/10/99 7:00 AM(E)	06/11/99 7:00AM(E)
06/09/99 7:00	1.25	005	06/10/99	06/10/99 7:00 Am(E)	06/11/99 7:00AM(E)
06/09/99 7:00	1.25	008	06/10/99	06/10/99 7:00 AM(E)	06/11/99 7:00 AM(E)
06/09/99 7:00	1.25	009	06/10/99	06/10/99 7:00 AM(E)	06/11/99 7:00 AM(E)
06/09/99 7:00	1.25	011	06/10/99	06/10/99 7:00 AM(E)	06/11/99 7:00 AM(E)
06/09/99	1.25	016	06/10/99	06/10/99 7:00 AM(E)	06/11/99 7:00AM(E)
06/13/99	.50	005	06/14/99	06/14/99 7:00 AM(E)	06/15/99 7:00AM(E)
06/13/99	.50	008	06/14/99	06/14/99 7:00 AM(E)	06/15/99 7:00AM(E)
06/13/99	.50	009	06/14/99	06/14/99 7:00 AM(E)	06/15/99 7:00Am(E)
06/13/99	.50	011	06/14/99	06/14/99 7:00 AM(E)	06/15/99 7:00AM(E)

Name/Title Principal Executive Officer	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (*Penalties under these statutes may include fines no to $10,000 and/or maximum imprisonment of between 6 months and 5 years.*)	Opal I Lord Mayor	Date		
Mayor Opal I. Lord		Signature of Principal Executive Officer or Authorized Agent	07	13	99
Typed or Printed			Mo.	Day	Yr.

OFFICE OF WATER MANAGEMENT
EPA
Aug 16 12 08 PM '99

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CSO DISCHARGE MONITORING REPORT (DMR)

MONITORING PERIOD: 07 / 99 (MONTH / YEAR) NO CSO DISCHARGES OCCURRED: ☐

NAME: CITY OF HARTFORD CITY PERMIT NUMBER: 0021628

ADDRESS: 700 NORTH WALNUT STREET

CITY: HARTFORD CITY STATE: IN. ZIP CODE: 47348 TELEPHONE: ( ) 765-348-3855

Precipitation Event Date/Time:	Precipitation (In Inches):	CSO Outfall Number	Discharge Event Date	Time Discharge Begins: Specify either Actual(A) Estimate(E)	Time Discharge Stops: Specify either Actual(A) Estimate(E)
7-28-99	1.6	002	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM(I
7-28-99	1.6	003	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM(E
7-28-99	1.6	004	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM(E
7-28-99	1.6	005	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I
7-28-99	1.6	007	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I
7-28-99	1.6	008	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I
7-28-99	1.6	009	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I
7-28-99	1.6	011	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I
7-28-99	1.6	016	7-28-99	7-28-99 7:00 AM (E)	7-29-99 7:00 AM (I

Name/Title Principal Executive Officer	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 3 years.)	Signature of Principal Executive Officer or Authorized Agent	Date		
Mayor Opal I. Lord			08	11	99
Typed or Printed			Mo.	Day	Yr.

APPENDIX II

DataSonde 4 34601 (Annotate: Unit # 4)
Log File Name : Hartford City
Setup Date (MMDDYY) : 092899
Setup Time (HHMMSS) : 093244
Starting Date (MMDDYY) : 092899
Starting Time (HHMMSS) : 120000
Stopping Date (MMDDYY) : 100499
Stopping Time (HHMMSS) : 120000
Interval (HHMMSS) : 001500
Sensor warmup (HHMMSS) : 000500
Circltr warmup (HHMMSS) : 000500

Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 092899					
120000	29.56	100.1	7.34	7.42	968
121500	30.35	100.8	7.33	7.37	968
123000	31.11	101.1	7.35	7.30	998
124500	31.78	74.0	7.36	5.30	350
130000	32.21	77.5	7.38	5.51	366
131500	33.05	94.3	7.44	6.61	486
133000	35.20	95.3	7.39	6.44	435
134500	36.12	109.0	7.39	7.27	0.3
Annotate:	Placed Datasonde in Little Lick Creek				
140000	19.11	0.5	7.41	0.04	1283
141500	19.10	0.0	7.47	0.00	1283
143000	19.07	0.0	7.51	0.00	1283
144500	19.13	0.0	7.55	0.00	1282
150000	19.17	0.0	7.56	0.00	1281
151500	19.16	0.0	7.57	0.00	1281
153000	19.21	0.0	7.58	0.00	1280
154500	19.25	0.0	7.59	0.00	1279
160000	19.29	0.0	7.60	0.00	1279
161500	19.29	0.0	7.60	0.00	1277
163000	19.30	0.0	7.60	0.00	1277
164500	19.32	0.0	7.60	0.00	1276
170000	19.33	0.0	7.60	0.00	1274
171500	19.34	0.0	7.60	0.00	1274
173000	19.38	0.0	7.60	0.00	1274
174500	19.39	0.0	7.60	0.00	1273
180000	19.41	0.0	7.61	0.00	1272
181500	19.40	0.0	7.60	0.00	1273
183000	19.40	0.0	7.60	0.00	1272
184500	19.43	0.0	7.60	0.00	1269
190000	19.43	0.0	7.60	0.00	1270
191500	19.44	0.0	7.60	0.00	1270
193000	19.47	0.0	7.60	0.00	1267
194500	19.47	0.0	7.60	0.00	1268
200000	19.46	0.0	7.60	0.00	1268
201500	19.49	0.0	7.60	0.00	1267
203000	19.49	0.0	7.60	0.00	1266
204500	19.48	0.0	7.60	0.00	1266
210000	19.48	0.0	7.60	0.00	1266
211500	19.51	0.0	7.60	0.00	1264
213000	19.51	0.0	7.60	0.00	1264
214500	19.51	0.0	7.60	0.00	1266
220000	19.52	0.0	7.60	0.00	1265

Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
221500	19.55	0.0	7.60	0.00	1264
223000	19.58	0.0	7.60	0.00	1264
224500	19.58	0.0	7.59	0.00	1265
Date (MMDDYY) : 092899					
230000	19.59	0.0	7.59	0.00	1265
231500	19.61	0.0	7.59	0.00	1263
233000	19.61	0.0	7.59	0.00	1263
234500	19.65	0.0	7.59	0.00	1263
Date (MMDDYY) : 092999					
000000	19.67	0.0	7.59	0.00	1264
001500	19.67	0.0	7.59	0.00	1264
003000	19.68	0.0	7.59	0.00	1264
004500	19.69	0.0	7.59	0.00	1262
010000	19.70	0.0	7.59	0.00	1262
011500	19.70	0.0	7.58	0.00	1263
013000	19.71	0.0	7.58	0.00	1262
014500	19.75	0.0	7.59	0.00	1256
020000	19.74	0.0	7.59	0.00	1253
021500	19.75	0.0	7.58	0.00	1252
023000	19.75	0.0	7.57	0.00	1256
024500	19.78	0.0	7.57	0.00	1249
030000	19.82	0.0	7.58	0.00	1244
031500	20.36	0.0	7.57	0.00	1253
033000	20.60	0.0	7.48	0.00	1156
034500	20.51	8.8	7.41	0.77	897
040000	20.45	6.7	7.37	0.58	849
041500	20.45	0.0	7.32	0.00	924
043000	20.55	0.0	7.36	0.00	950
044500	20.60	0.0	7.36	0.00	929
050000	20.58	0.0	7.33	0.00	870
051500	20.53	0.8	7.27	0.07	791
053000	20.47	6.2	7.19	0.54	697
054500	20.47	11.2	7.13	0.99	629
060000	20.42	17.7	7.11	1.56	577
061500	20.30	27.3	7.10	2.41	489
063000	20.20	30.0	7.11	2.65	442
064500	20.23	20.6	7.16	1.82	472
070000	20.42	2.2	7.25	0.19	590
071500	20.59	0.0	7.33	0.00	683
073000	20.63	0.0	7.36	0.00	710
074500	20.60	0.0	7.35	0.00	701
080000	20.54	0.0	7.33	0.00	681
081500	20.48	0.0	7.32	0.00	661
083000	20.41	0.0	7.31	0.00	647
084500	20.35	0.0	7.30	0.00	641
090000	20.29	0.0	7.29	0.00	638
091500	20.24	0.0	7.29	0.00	637
093000	20.19	0.0	7.27	0.00	637
094500	20.15	0.0	7.27	0.00	637
100000	20.10	0.0	7.26	0.00	637
101500	20.06	0.0	7.25	0.00	637
103000	20.02	0.0	7.24	0.00	636
104500	19.98	0.0	7.24	0.00	635
110000	19.94	0.0	7.23	0.00	633
111500	19.88	0.0	7.23	0.00	630

113000	19.85	0.0	7.22	0.00	627
114500	19.81	0.0	7.21	0.00	623
120000	19.76	0.0	7.20	0.00	619
121500	19.72	0.0	7.19	0.00	615
123000	19.67	0.0	7.18	0.00	609
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 092999					
124500	19.62	0.0	7.18	0.00	603
130000	19.59	0.0	7.17	0.00	598
131500	19.55	0.0	7.16	0.00	592
133000	19.51	0.0	7.16	0.00	587
134500	19.46	0.0	7.16	0.00	582
140000	19.41	0.0	7.15	0.00	578
141500	19.37	0.0	7.15	0.00	571
143000	19.31	0.0	7.15	0.00	566
144500	19.26	0.0	7.15	0.00	558
150000	19.21	0.0	7.15	0.00	552
151500	19.13	0.0	7.16	0.00	543
153000	19.08	0.0	7.16	0.00	539
154500	19.01	0.0	7.16	0.00	537
160000	18.94	0.0	7.15	0.00	538
161500	18.89	0.0	7.16	0.00	541
163000	18.84	0.0	7.16	0.00	546
164500	18.79	0.0	7.17	0.00	551
170000	18.74	0.0	7.18	0.00	558
171500	18.69	0.0	7.18	0.00	564
173000	18.66	0.0	7.19	0.00	571
174500	18.63	0.0	7.20	0.00	576
180000	18.56	0.0	7.20	0.00	583
181500	18.50	0.0	7.21	0.00	588
183000	18.45	0.0	7.21	0.00	594
184500	18.39	0.0	7.22	0.00	600
190000	18.33	0.0	7.23	0.00	605
191500	18.27	0.0	7.23	0.00	610
193000	18.21	0.0	7.24	0.00	615
194500	18.16	0.0	7.24	0.00	621
200000	18.10	0.0	7.25	0.00	626
201500	18.05	0.0	7.25	0.00	632
203000	17.99	0.0	7.26	0.00	638
204500	17.93	0.0	7.27	0.00	646
210000	17.87	0.0	7.27	0.00	653
211500	17.81	0.0	7.28	0.00	661
213000	17.75	0.0	7.28	0.00	669
214500	17.69	0.0	7.29	0.00	676
220000	17.64	0.0	7.29	0.00	682
221500	17.59	0.0	7.29	0.00	688
223000	17.53	0.0	7.30	0.00	694
224500	17.48	0.0	7.30	0.00	700
230000	17.43	0.0	7.30	0.00	704
231500	17.39	0.0	7.30	0.00	709
233000	17.34	0.0	7.31	0.00	713
234500	17.30	0.0	7.30	0.00	716
Date (MMDDYY) : 093099					
000000	17.25	0.0	7.30	0.00	718
001500	17.21	0.0	7.31	0.00	721
003000	17.17	0.0	7.31	0.00	722

004500	17.11	0.0	7.31	0.00	724
010000	17.06	0.0	7.31	0.00	725
011500	17.01	0.0	7.30	0.00	727
013000	16.96	0.0	7.30	0.00	728
014500	16.92	0.0	7.31	0.00	729
020000	16.87	0.0	7.31	0.00	729
021500	16.82	0.0	7.30	0.00	731
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 093099					
023000	16.78	0.0	7.30	0.00	731
024500	16.73	0.0	7.30	0.00	731
030000	16.68	0.0	7.30	0.00	732
031500	16.64	0.0	7.30	0.00	733
033000	16.60	0.0	7.30	0.00	733
034500	16.54	0.0	7.29	0.00	733
040000	16.49	0.0	7.29	0.00	734
041500	16.44	0.0	7.29	0.00	734
043000	16.37	0.0	7.29	0.00	734
044500	16.33	0.0	7.29	0.00	734
050000	16.26	0.0	7.29	0.00	734
051500	16.21	0.0	7.29	0.00	735
053000	16.15	0.0	7.29	0.00	734
054500	16.09	0.0	7.28	0.00	735
060000	16.05	0.0	7.28	0.00	735
061500	15.99	0.0	7.28	0.00	735
063000	15.93	0.0	7.28	0.00	735
064500	15.88	0.0	7.28	0.00	736
070000	15.83	0.0	7.28	0.00	736
071500	15.77	0.0	7.28	0.00	737
073000	15.73	0.0	7.28	0.00	737
074500	15.69	0.0	7.28	0.00	737
080000	15.65	0.0	7.28	0.00	738
081500	15.61	0.0	7.28	0.00	738
083000	15.58	0.0	7.28	0.00	738
084500	15.57	0.0	7.28	0.00	739
090000	15.58	0.0	7.28	0.00	740
091500	15.59	0.0	7.28	0.00	740
093000	15.60	0.0	7.27	0.00	741
094500	15.61	0.0	7.27	0.00	742
100000	15.62	0.0	7.27	0.00	743
101500	15.63	0.0	7.27	0.00	743
103000	15.67	0.0	7.27	0.00	744
104500	15.68	0.0	7.26	0.00	744
110000	15.67	0.0	7.27	0.00	745
111500	15.67	0.0	7.27	0.00	745
113000	15.70	0.0	7.27	0.00	746
114500	15.71	0.0	7.26	0.00	746
120000	15.72	0.0	7.26	0.00	747
121500	15.73	0.0	7.26	0.00	748
123000	15.70	0.0	7.26	0.00	749
124500	15.67	0.0	7.26	0.00	750
130000	15.68	0.0	7.26	0.00	750
131500	15.70	0.0	7.26	0.00	750
133000	15.68	0.0	7.26	0.00	752
134500	15.63	0.0	7.26	0.00	754
140000	15.64	0.0	7.26	0.00	755

Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
141500	15.60	0.0	7.26	0.00	756
143000	15.60	0.0	7.27	0.00	759
144500	15.60	0.0	7.27	0.00	760
150000	15.60	0.0	7.27	0.00	764
151500	15.61	0.0	7.27	0.00	767
153000	15.63	0.0	7.27	0.00	771
154500	15.64	0.0	7.27	0.00	776
160000	15.66	0.0	7.27	0.00	781
161500	15.66	0.0	7.28	0.00	789
Date (MMDDYY) : 093099					
163000	15.65	0.0	7.28	0.00	796
164500	15.67	0.0	7.28	0.00	803
170000	15.68	0.0	7.28	0.00	809
171500	15.70	0.0	7.28	0.00	818
173000	15.71	0.0	7.29	0.00	823
174500	15.69	0.0	7.29	0.00	823
180000	15.69	0.0	7.29	0.00	843
181500	15.67	0.0	7.29	0.00	847
183000	15.63	0.0	7.29	0.00	840
184500	15.63	0.0	7.30	0.00	844
190000	15.59	0.0	7.30	0.00	835
191500	15.54	0.0	7.30	0.00	830
193000	15.51	0.0	7.30	0.00	841
194500	15.46	0.0	7.31	0.00	852
200000	15.41	0.0	7.31	0.00	865
201500	15.36	0.0	7.32	0.00	877
203000	15.29	0.0	7.32	0.00	880
204500	15.25	0.0	7.32	0.00	890
210000	15.21	0.0	7.32	0.00	894
211500	15.21	0.0	7.31	0.00	910
213000	15.23	0.0	7.32	0.00	929
214500	15.24	0.0	7.32	0.00	941
220000	15.21	0.0	7.33	0.00	946
221500	15.16	0.0	7.32	0.00	943
223000	15.11	0.0	7.32	0.00	939
224500	15.05	0.0	7.32	0.00	935
230000	15.00	0.0	7.32	0.00	935
231500	14.95	0.0	7.32	0.00	932
233000	14.93	0.0	7.33	0.00	936
234500	14.91	0.0	7.33	0.00	941
Date (MMDDYY) : 100199					
000000	14.86	0.0	7.32	0.00	942
001500	14.83	0.0	7.33	0.00	943
003000	14.79	0.0	7.33	0.00	943
004500	14.75	0.0	7.32	0.00	942
010000	14.72	0.0	7.32	0.00	942
011500	14.69	0.0	7.32	0.00	941
013000	14.66	0.0	7.32	0.00	940
014500	14.62	0.0	7.32	0.00	939
020000	14.58	0.0	7.32	0.00	938
021500	14.53	0.0	7.32	0.00	936
023000	14.49	0.0	7.32	0.00	935
024500	14.45	0.0	7.32	0.00	933
030000	14.41	0.0	7.32	0.00	931
031500	14.38	0.0	7.32	0.00	929

033000	14.35	0.0	7.32	0.00	927
034500	14.30	0.0	7.32	0.00	926
040000	14.28	0.0	7.32	0.00	924
041500	14.24	0.0	7.32	0.00	923
043000	14.21	0.0	7.32	0.00	922
044500	14.18	0.0	7.32	0.00	921
050000	14.15	0.0	7.32	0.00	919
051500	14.12	0.0	7.32	0.00	919
053000	14.09	0.0	7.32	0.00	918
054500	14.05	0.0	7.32	0.00	917
060000	14.03	0.0	7.31	0.00	917
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100199					
061500	13.99	0.0	7.31	0.00	916
063000	13.95	0.0	7.32	0.00	915
064500	13.92	0.0	7.32	0.00	915
070000	13.90	0.0	7.32	0.00	915
071500	13.87	0.0	7.31	0.00	915
073000	13.85	0.0	7.31	0.00	915
074500	13.84	0.0	7.31	0.00	915
080000	13.84	0.0	7.31	0.00	915
081500	13.83	0.0	7.31	0.00	915
083000	13.83	0.0	7.31	0.00	915
084500	13.84	0.0	7.31	0.00	916
090000	13.86	0.0	7.31	0.00	916
091500	13.90	0.0	7.31	0.00	917
093000	13.98	0.0	7.31	0.00	918
094500	14.05	0.0	7.30	0.00	920
100000	14.12	0.0	7.30	0.00	922
101500	14.15	0.0	7.30	0.00	923
103000	14.19	0.0	7.29	0.00	925
104500	14.21	0.0	7.29	0.00	926
110000	14.26	0.0	7.29	0.00	929
111500	14.28	0.0	7.29	0.00	930
113000	14.34	0.0	7.29	0.00	929
114500	14.39	0.0	7.28	0.00	930
120000	14.44	0.0	7.28	0.00	930
121500	14.45	0.0	7.28	0.00	931
123000	14.33	0.0	7.27	0.00	933
124500	14.36	0.0	7.27	0.00	939
130000	14.43	0.0	7.27	0.00	939
131500	14.39	0.0	7.27	0.00	941
133000	14.45	0.0	7.27	0.00	940
134500	14.41	0.0	7.27	0.00	943
140000	14.59	0.0	7.27	0.00	942
141500	14.68	0.0	7.27	0.00	942
143000	14.66	0.0	7.27	0.00	941
144500	14.47	0.0	7.27	0.00	943
150000	14.39	0.0	7.26	0.00	948
151500	14.42	0.0	7.26	0.00	950
153000	14.46	0.0	7.26	0.00	951
154500	14.61	0.0	7.27	0.00	948
160000	14.55	0.0	7.25	0.00	952
161500	14.65	0.0	7.25	0.00	954
163000	14.73	0.0	7.25	0.00	956
164500	14.65	0.0	7.25	0.00	957

170000	14.80	0.0	7.25	0.00	958
171500	14.91	0.0	7.25	0.00	958
173000	14.90	0.0	7.25	0.00	962
174500	14.99	0.0	7.25	0.00	962
180000	14.95	0.0	7.25	0.00	964
181500	14.86	0.0	7.25	0.00	967
183000	14.86	0.0	7.26	0.00	965
184500	14.81	0.0	7.26	0.00	969
190000	14.74	0.0	7.26	0.00	970
191500	14.65	0.0	7.27	0.00	972
193000	14.55	0.0	7.27	0.00	974
194500	14.45	0.0	7.26	0.00	976
200000	14.38	0.0	7.25	0.00	982
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100199					
201500	14.33	0.0	7.25	0.00	985
203000	14.27	0.0	7.25	0.00	986
204500	14.23	0.0	7.25	0.00	985
210000	14.19	0.0	7.24	0.00	985
211500	14.16	0.0	7.24	0.00	984
213000	14.11	0.0	7.24	0.00	983
214500	14.08	0.0	7.24	0.00	982
220000	14.04	0.0	7.24	0.00	982
221500	14.02	0.0	7.24	0.00	983
223000	14.02	0.0	7.24	0.00	988
224500	14.05	0.0	7.23	0.00	995
230000	14.10	0.0	7.23	0.00	997
231500	14.11	0.0	7.23	0.00	998
233000	14.11	0.0	7.23	0.00	997
234500	14.13	0.0	7.23	0.00	998
Date (MMDDYY) : 100299					
000000	14.15	0.0	7.23	0.00	999
001500	14.16	0.0	7.23	0.00	1000
003000	14.16	0.0	7.23	0.00	1000
004500	14.16	0.0	7.23	0.00	1000
010000	14.15	0.0	7.23	0.00	1000
011500	14.12	0.0	7.23	0.00	1000
013000	14.10	0.0	7.23	0.00	1000
014500	14.08	0.0	7.23	0.00	1001
020000	14.06	0.0	7.23	0.00	1000
021500	14.05	0.0	7.24	0.00	1001
023000	14.03	0.0	7.23	0.00	1000
024500	14.02	0.0	7.24	0.00	1001
030000	14.01	0.0	7.24	0.00	1001
031500	13.99	0.0	7.23	0.00	1001
033000	13.98	0.0	7.24	0.00	1001
034500	13.95	0.0	7.24	0.00	1001
040000	13.94	0.0	7.23	0.00	1002
041500	13.92	0.0	7.23	0.00	1002
043000	13.90	0.0	7.23	0.00	1002
044500	13.89	0.0	7.23	0.00	1002
050000	13.87	0.0	7.23	0.00	1002
051500	13.85	0.0	7.23	0.00	1002
053000	13.83	0.0	7.23	0.00	1002
054500	13.80	0.0	7.23	0.00	1003
060000	13.78	0.0	7.23	0.00	1003

061500	13.77	0.0	7.23	0.00	1003
063000	13.74	0.0	7.23	0.00	1003
064500	13.72	0.0	7.23	0.00	1003
070000	13.71	0.0	7.23	0.00	1003
071500	13.69	0.0	7.23	0.00	1004
073000	13.69	0.0	7.23	0.00	1004
074500	13.69	0.0	7.23	0.00	1004
080000	13.70	0.0	7.23	0.00	1005
081500	13.72	0.0	7.23	0.00	1005
083000	13.75	0.0	7.23	0.00	1006
084500	13.79	0.0	7.23	0.00	1006
090000	13.83	0.0	7.23	0.00	1007
091500	13.87	0.0	7.23	0.00	1010
093000	13.90	0.0	7.23	0.00	1012
094500	13.95	0.0	7.23	0.00	1014
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100299					
100000	13.98	0.0	7.22	0.00	1015
101500	13.99	0.0	7.22	0.00	1016
103000	14.05	0.0	7.22	0.00	1016
104500	14.07	0.0	7.22	0.00	1016
110000	14.06	0.0	7.22	0.00	1018
111500	14.07	0.0	7.22	0.00	1021
113000	14.09	0.0	7.22	0.00	1022
114500	14.13	0.0	7.22	0.00	1022
120000	14.14	0.0	7.22	0.00	1024
121500	14.18	0.0	7.22	0.00	1025
123000	14.27	0.0	7.21	0.00	1023
124500	14.32	0.0	7.21	0.00	1024
130000	14.54	0.0	7.21	0.00	1022
131500	14.33	0.0	7.20	0.00	1027
133000	14.23	0.0	7.20	0.00	1032
134500	14.27	0.0	7.20	0.00	1036
140000	14.68	0.0	7.22	0.00	1028
141500	14.86	0.0	7.20	0.00	1029
143000	15.03	0.0	7.20	0.00	1030
144500	15.00	0.0	7.19	0.00	1033
150000	14.92	0.0	7.19	0.00	1037
151500	14.79	0.0	7.19	0.00	1040
153000	14.80	0.0	7.18	0.00	1044
154500	14.69	0.0	7.18	0.00	1047
160000	14.66	0.0	7.18	0.00	1052
161500	14.69	0.0	7.18	0.00	1054
163000	14.42	0.0	7.19	0.00	1054
164500	14.49	0.0	7.18	0.00	1065
170000	14.54	0.0	7.18	0.00	1060
171500	14.42	0.0	7.18	0.00	1066
173000	14.49	0.0	7.18	0.00	1068
174500	14.53	0.0	7.18	0.00	1067
180000	14.54	0.0	7.18	0.00	1069
181500	14.32	0.0	7.18	0.00	1072
183000	14.26	0.0	7.18	0.00	1074
184500	14.21	0.0	7.19	0.00	1075
190000	14.27	0.0	7.20	0.00	1082
191500	14.24	0.0	7.20	0.00	1084
193000	14.20	0.0	7.21	0.00	1083

194500	14.14	0.0	7.21	0.00	1086
200000	14.08	0.0	7.20	0.00	1089
201500	14.02	0.0	7.20	0.00	1094
203000	13.99	0.0	7.20	0.00	1095
204500	13.96	0.0	7.21	0.00	1092
210000	13.93	0.0	7.22	0.00	1087
211500	13.91	0.0	7.22	0.00	1086
213000	13.91	0.0	7.21	0.00	1085
214500	14.00	0.0	7.20	0.00	1089
220000	14.09	0.0	7.20	0.00	1094
221500	14.12	0.0	7.19	0.00	1096
223000	14.17	0.0	7.20	0.00	1098
224500	14.20	0.0	7.20	0.00	1101
230000	14.21	0.0	7.20	0.00	1103
231500	14.26	0.0	7.21	0.00	1105
233000	14.28	0.0	7.21	0.00	1107
234500	14.29	0.0	7.22	0.00	1108
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100299					
Date (MMDDYY) : 100399					
000000	14.29	0.0	7.22	0.00	1108
001500	14.31	0.0	7.22	0.00	1109
003000	14.31	0.0	7.22	0.00	1110
004500	14.31	0.0	7.22	0.00	1111
010000	14.31	0.0	7.23	0.00	1112
011500	14.31	0.0	7.23	0.00	1113
013000	14.29	0.0	7.23	0.00	1113
014500	14.28	0.0	7.23	0.00	1114
020000	14.26	0.0	7.23	0.00	1114
021500	14.24	0.0	7.24	0.00	1115
023000	14.22	0.0	7.23	0.00	1116
024500	14.20	0.0	7.23	0.00	1116
030000	14.17	0.0	7.24	0.00	1117
031500	14.14	0.0	7.24	0.00	1117
033000	14.12	0.0	7.23	0.00	1118
034500	14.09	0.0	7.23	0.00	1119
040000	14.07	0.0	7.23	0.00	1119
041500	14.05	0.0	7.23	0.00	1119
043000	14.03	0.0	7.23	0.00	1120
044500	14.01	0.0	7.23	0.00	1120
050000	13.98	0.0	7.23	0.00	1121
051500	13.95	0.0	7.22	0.00	1121
053000	13.92	0.0	7.22	0.00	1122
054500	13.90	0.0	7.22	0.00	1122
060000	13.86	0.0	7.23	0.00	1123
061500	13.82	0.0	7.23	0.00	1125
063000	13.77	0.0	7.23	0.00	1126
064500	13.72	0.0	7.23	0.00	1127
070000	13.67	0.0	7.23	0.00	1127
071500	13.61	0.0	7.23	0.00	1128
073000	13.56	0.0	7.23	0.00	1128
074500	13.53	0.0	7.23	0.00	1129
080000	13.51	0.0	7.23	0.00	1129
081500	13.51	0.0	7.23	0.00	1130
083000	13.48	0.0	7.23	0.00	1131
084500	13.47	0.0	7.23	0.00	1131

090000	13.47	0.0	7.23	0.00	1132
091500	13.50	0.0	7.23	0.00	1132
093000	13.54	0.0	7.23	0.00	1133
094500	13.59	0.0	7.23	0.00	1133
100000	13.62	0.0	7.23	0.00	1134
101500	13.68	0.0	7.23	0.00	1134
103000	13.71	0.0	7.23	0.00	1134
104500	13.72	0.0	7.23	0.00	1135
110000	13.73	0.0	7.23	0.00	1135
111500	13.77	0.0	7.23	0.00	1135
113000	13.78	0.0	7.23	0.00	1136
114500	13.76	0.0	7.23	0.00	1137
120000	13.73	0.0	7.23	0.00	1137
121500	13.68	0.0	7.23	0.00	1137
123000	13.64	0.0	7.23	0.00	1137
124500	13.61	0.0	7.23	0.00	1138
130000	13.60	0.0	7.23	0.00	1138
131500	13.61	0.0	7.23	0.00	1138
133000	13.62	0.0	7.23	0.00	1138
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100399					
134500	13.63	0.0	7.23	0.00	1139
140000	13.64	0.0	7.23	0.00	1139
141500	13.65	0.0	7.23	0.00	1139
143000	13.66	0.0	7.23	0.00	1139
144500	13.67	0.0	7.23	0.00	1139
150000	13.67	0.0	7.23	0.00	1140
151500	13.67	0.0	7.23	0.00	1139
153000	13.69	0.0	7.24	0.00	1140
154500	13.75	0.0	7.24	0.00	1140
160000	13.79	0.0	7.24	0.00	1140
161500	13.77	0.0	7.24	0.00	1140
163000	13.74	0.0	7.24	0.00	1140
164500	13.70	0.0	7.24	0.00	1140
170000	13.65	0.0	7.25	0.00	1140
171500	13.61	0.0	7.24	0.00	1140
173000	13.56	0.0	7.25	0.00	1140
174500	13.51	0.0	7.24	0.00	1140
180000	13.47	0.0	7.24	0.00	1140
181500	13.44	0.0	7.25	0.00	1140
183000	13.43	0.0	7.24	0.00	1140
184500	13.41	0.0	7.25	0.00	1139
190000	13.39	0.0	7.25	0.00	1137
191500	13.37	0.0	7.26	0.00	1135
193000	13.36	0.0	7.26	0.00	1134
194500	13.32	0.0	7.27	0.00	1129
200000	13.26	0.0	7.29	0.00	1121
201500	13.33	0.0	7.27	0.00	1126
203000	13.25	0.0	7.27	0.00	1130
204500	12.88	0.0	7.32	0.00	1128
210000	12.73	0.0	7.35	0.00	1164
211500	12.82	0.0	7.40	0.00	1187
213000	12.92	0.2	7.43	0.02	1100
214500	13.00	2.4	7.47	0.25	1024
220000	13.07	0.0	7.52	0.00	1063
221500	13.20	0.0	7.56	0.00	1163

223000	13.49	0.0	7.61	0.00	1295
224500	13.67	0.0	7.61	0.00	1325
230000	13.82	0.0	7.60	0.00	1291
231500	13.93	0.0	7.58	0.00	1221
233000	14.01	0.0	7.55	0.00	1141
234500	14.05	0.0	7.52	0.00	1061
Date (MMDDYY) : 100499					
000000	14.06	0.0	7.50	0.00	991
001500	14.05	0.0	7.47	0.00	934
003000	14.04	0.0	7.45	0.00	889
004500	14.02	0.0	7.43	0.00	845
010000	13.99	0.0	7.42	0.00	816
011500	13.96	0.0	7.40	0.00	790
013000	13.93	0.0	7.39	0.00	771
014500	13.90	0.0	7.39	0.00	754
020000	13.87	0.0	7.38	0.00	744
021500	13.85	0.0	7.38	0.00	737
023000	13.82	0.0	7.37	0.00	732
024500	13.79	0.0	7.37	0.00	730
030000	13.75	0.0	7.37	0.00	732
031500	13.71	0.0	7.37	0.00	733
Time	Temp	DO%	pH	DO	SpCond
HHMMSS	øC	Sat	Units	mg/l	æS/cm
Date (MMDDYY) : 100499					
033000	13.69	0.0	7.37	0.00	736
034500	13.66	0.0	7.37	0.00	740
040000	13.64	0.0	7.37	0.00	744
041500	13.60	0.0	7.37	0.00	748
043000	13.59	0.0	7.37	0.00	752
044500	13.55	0.0	7.38	0.00	757
050000	13.52	0.0	7.38	0.00	763
051500	13.49	0.0	7.38	0.00	769
053000	13.47	0.0	7.38	0.00	777
054500	13.46	0.0	7.37	0.00	783
060000	13.43	0.0	7.37	0.00	791
061500	13.41	0.0	7.37	0.00	799
063000	13.39	0.0	7.36	0.00	808
064500	13.39	0.0	7.36	0.00	818
070000	13.37	0.0	7.36	0.00	827
071500	13.36	0.0	7.36	0.00	838
073000	13.35	0.0	7.37	0.00	849
074500	13.35	0.0	7.37	0.00	860
080000	13.34	0.0	7.37	0.00	870
081500	13.34	0.0	7.37	0.00	884
083000	13.34	0.0	7.37	0.00	895
084500	13.35	0.0	7.37	0.00	909
090000	13.35	0.0	7.37	0.00	922
091500	13.35	0.0	7.37	0.00	937
093000	13.37	0.0	7.37	0.00	950
094500	13.39	0.0	7.37	0.00	965
100000	13.39	0.0	7.38	0.00	979
101500	13.42	0.0	7.38	0.00	995
103000	13.44	0.0	7.39	0.00	1012
104500	13.46	0.0	7.38	0.00	1024
110000	13.48	0.0	7.39	0.00	1041
111500	13.49	0.0	7.39	0.00	1055
113000	13.51	0.0	7.39	0.00	1069

```
114500     13.54    0.0   7.39   0.00    1081
120000     13.57    0.0   7.40   0.00    1096
Parameter setup or calibration changed at 100799 084229 (Annotate: Datasonde
post calibrated for dissolved oxygen on 10/7/99)

Recovery finished at 100799 084803
```

APPENDIX III

You say tomato.
we say Hartford Packing...
leading family-owned supplier of premium quality processed tomato products for the food industry - since 1943. Home of *Mama Rizzo's* Pasta Sauces...

HARTFORD PACKING COMPANY, INC.
1005 East Washington Street
Hartford City, IN 47348
765.348.3404 Phone
888.916.MAMA
765.348.4025 Fax

OFFICE OF SOLID WASTE MANAGEMENT
LAND APPLICATION SECTION
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
100 NORTH SENATE AVENUE
P.O. BOX 6015
INDIANAPOLIS, IN 46206-6015

REFERENCE PERMIT NO. IN LA 000561

29 OCTOBER, 1999

MR. JEFF HARMAN:

ENCLOSED ARE THE STATE LAND APPLICATION DISCHARGE FORMS FOR THE MONTH OF SEPTEMBER, 1999. THIS SEASONS LAND APPLICATION BEGAN ON 8 SEPTEMBER AND HAS CONTINUED THROUGH UNTIL TODAY, FRIDAY, 29 OCTOBER. THIS SHOULD COMPLETE THE LAND APPLICATION FOR THIS SEASON, ALTHOUGH DEPENDING UPON THE AMOUNT OF RAINFALL AND CONSEQUENT STREAM FLOW THERE COULD BE SOME NEED TO LAND APPLY NEXT SPRING.

I AM SUBMITTING THESE FORMS WITH SOME MISGIVINGS. I AM NOT COMFORTABLE WITH THE TOTAL KJELDAHL NITROGEN (TKN) AND POTASSIUM LEVELS THAT HAVE BEEN USED. IT MAY HAVE BEEN MY SAMPLING; WHO KNOWS? THESE ARE NOT EVEN IN THE SAME SOLAR SYSTEM WITH THE RESULTS THAT WERE ON THE REAPPLICATION PAPERS. I HAVE SENT IN ANOTHER SAMPLE FOR RETESTING FOR NEXT MONTHS DISCHARGE REPORTS. MAYBE THIS WILL SHED SOME LIGHT ON THE SUBJECT. I AM WILLING TO COME DOWN WITH THE SAMPLE RESULTS AND DISCUSS THIS CONCERN WITH YOU AT YOUR CONVENIENCE.

IF YOU HAVE ANY QUESTIONS CONCERNING THESE REPORTS OR ANYTHING ELSE, PLEASE CALL AND WE WILL RESOLVE WHATEVER IT IS.

VERY TRULY YOURS.

MAX TATMAN
CERTIFIED OPERATOR

Indiana Department of Environmental Management

Land Use Section - OSHWM

Land Application Monthly Report - Pollutant-Bearing Water

>>Complete and submit this form to IDEM each report month<<

Month:	SEPTEMBER	Year:	1999
Permittee	HARTFORD PACKING CO., INC	L.A. Permit No. IN LA:	LA000561

Disposal Summary:		Gallons
	No pollutant-bearing water was disposed this month	NA
YES	Pollutant-bearing water was land applied this month	4400000

I hereby certify that to the best of my knowledge and understanding this report is complete and accurate.

Max Tatman — Signature

MAX TATMAN — Printed Name

CERTIFIED OPERATOR — Title

11/29/99 — Date

RECEIVED

NOV 0 1 1999

DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
SOLID & HAZARDOUS WASTE MANAGEMENT

Indiana Department of Environmental Management

Land Use Section - OSHWM

Land Application Nutrient Summary - Pollutant-Bearing Water

>>Complete and retain this form and provide a copy to the application site farmer for each application site used during a report month

Month:	SEPTEMBER	**Year:**	1999
Permittee:	HARTFORD PACKING CO., INC.	**Site ID:**	JACKSON #1
L.A. Permit No. IN LA:	LA00056	**Acres Available:**	29.4

During this month and on the site indicated, **4200000** gallons of water was applied to **29.4** acres of the site's **29.4** total available acres.

Nutrient Summary:	Total	Per Acre Used
Pounds of Plant Available Nitrogen applied to this site this month:	4351	148
Pounds of Phosphorus, as P, applied to this site this month:	927	32
Pounds of Phosphorus, as P2O5, applied to this site this month:	2128	72
Pounds of Potassium, as K, applied to this site this month:	11884	404
Pounds of Potassium, as K2O, applied to this site this month:	14316	487

Residual Nitrogen from organic breakdown:	Total	Per Acre Used
Pounds of Residual Nitrogen available 1 year after application:	677	23
Pounds of Residual Nitrogen available 2 years after application:	361	12
Pounds of Residual Nitrogen available 3 years after application:	181	6

Heavy Metal and Micronutrient Summary:	Total	Per Acre Used
Pounds of Arsenic applied to this site this month:	0.024	0.001
Pounds of Cadmium applied to this site this month:	0.713	0.024
Pounds of Copper applied to this site this month:	2.615	0.089
Pounds of Lead applied to this site this month:	1.949	0.066
Pounds of Mercury applied to this site this month:	0.024	0.001
Pounds of Nickel applied to this site this month:	0.024	0.001
Pounds of Selenium applied to this site this month:	0.048	0.002
Pounds of Zinc applied to this site this month:	4.255	0.145

I hereby certify that a copy of this summary has been provided to the farmer of this application site.

Signature

10/29/99
Date

Indiana Department of Environmental Management

Land Use Section - OSHWM

Land Application Site Activity Report - Pollutant-Bearing Water

>>Complete and submit this form to IDEM for each application site used during a report month<<

Month:	SEPTEMBER	**Year:**	1999
Permittee:	HARTFORD PACKING CO., INC.	**Site ID:**	JACKSON #1
L.A. Permit No. IN LA:	LA000561	**Acres Available:**	29.4
		Acres Used This Month:	29.4

Loading Data:

Date:	Gallons Applied	Acres Used	Method Used* 1 or 2	Daily Analysis: Susp Solids	Fecal Coliform	Residual Chlorine	Weekly Analysis 1-5	Monthly Analysis 1 or 2
1								
2								
3								
4								
5								
6								
7								
8	250000	7.10	1		A		1	1
9	250000	7.10	1		B		1	1
10	250000	7.10	1		C		1	1
11	300000	8.10	1		D		1	1
12								1
13	250000	7.10	1		A		2	1
14	250000	7.10	1		B		2	1
15	250000	7.10	1		C		2	1
16	300000	8.10	1		D		2	1
17								
18								
19	250000	7.10	1		A		3	1
20	250000	7.10	1		B		3	1
21	250000	7.10	1		C		3	1
22	300000	8.10	1		D		3	1
23								
24								
25								
26	250000	7.10	1		A		4	1
27	250000	7.10	1		B		4	1
28	250000	7.10	1		C		4	1
29	300000	8.10	1		D		4	1
30								
31								

*Methods of Application: 1 = Surface, 2 = Injection

Lab Data:

DO NOT USE < IF NOT DETECTED — ENTER DETECTION LIMIT!

Weekly Analysis:

ANALYSIS #	pH	BOD5*	Vol. Solids*
1	6.9	4800	34
2	7.4	6800	34
3	7.3	3300	34
4	7.3	2900	34
5			

*Enter BOD5 and Volatile Solids as mg/l wet weight

Monthly Analysis:

ANALYSIS #	1	2	
Total N*	316.00		mg/l wet wt.
Ammonium N	120.00		mg/l wet wt.
Nitrate N	6.00		mg/l wet wt.
Phosphorus	39.00		mg/l wet wt.
Potassium	500.00		mg/l wet wt.

*Total Nitrogen = Total Kjeldahl Nitrogen + Nitrate Nitrogen

Annual Analysis:

Arsenic	0.001	mg/l wet wt.
Cadmium	0.030	mg/l wet wt.
Copper	0.110	mg/l wet wt.
Lead	0.082	mg/l wet wt.
Mercury	0.001	mg/l wet wt.
Nickel	0.001	mg/l wet wt.
Selenium	0.002	mg/l wet wt.
Zinc	0.179	mg/l wet wt.

Other Analysis:

PCB	NA	mg/kg dry wt.
Other		
Other		

What is the projected crop(s) for which the above application(s) was intended to fertilize? ALFALFA & GRASS

If more than one crop is listed, indicate on the site-use map the areas planted, or to be planted, in each different type of crop.

Indiana Department of Environmental Management

Land Use Section - OSHWM

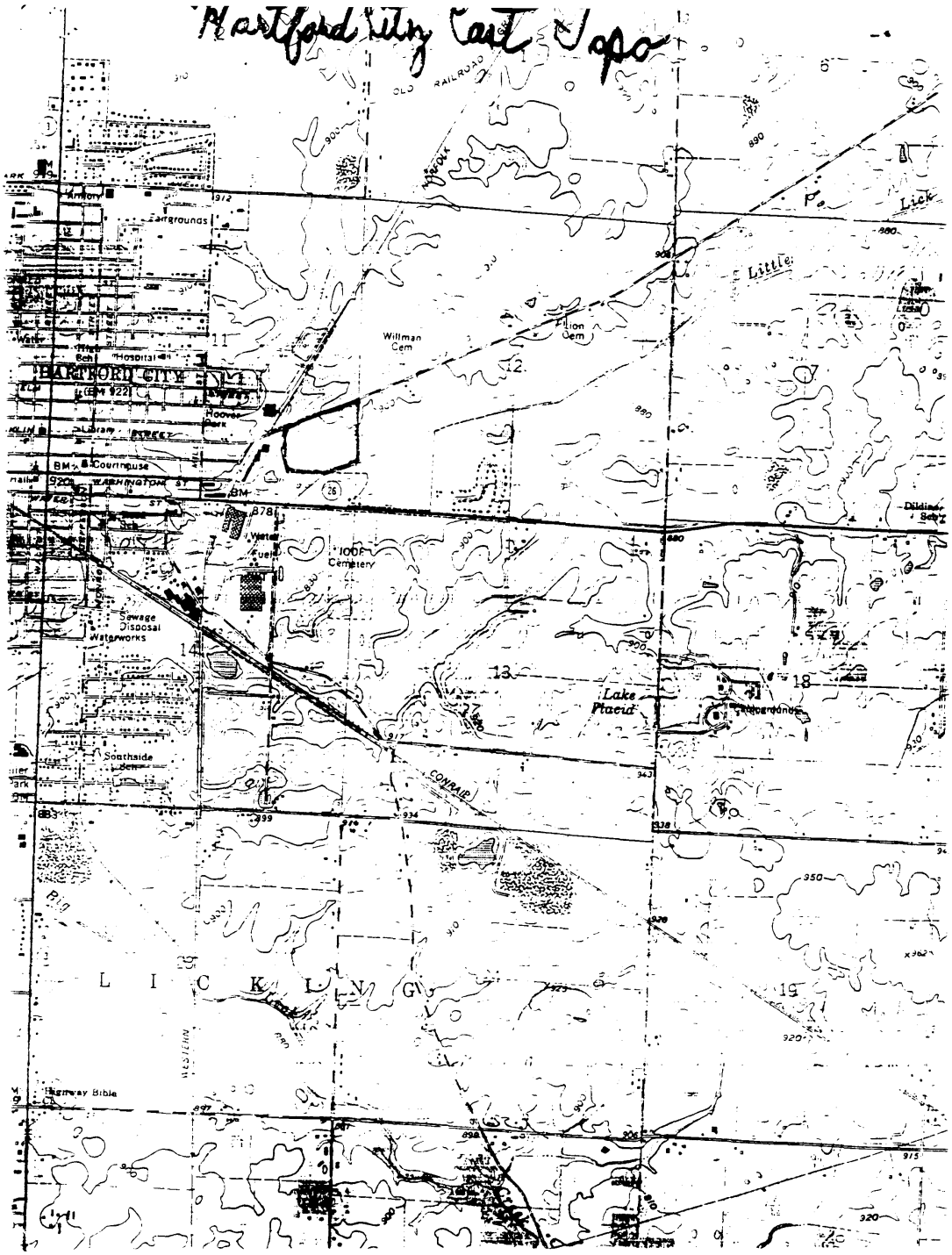
Land Application Cumulative Load Summary - Pollutant-Bearing Water

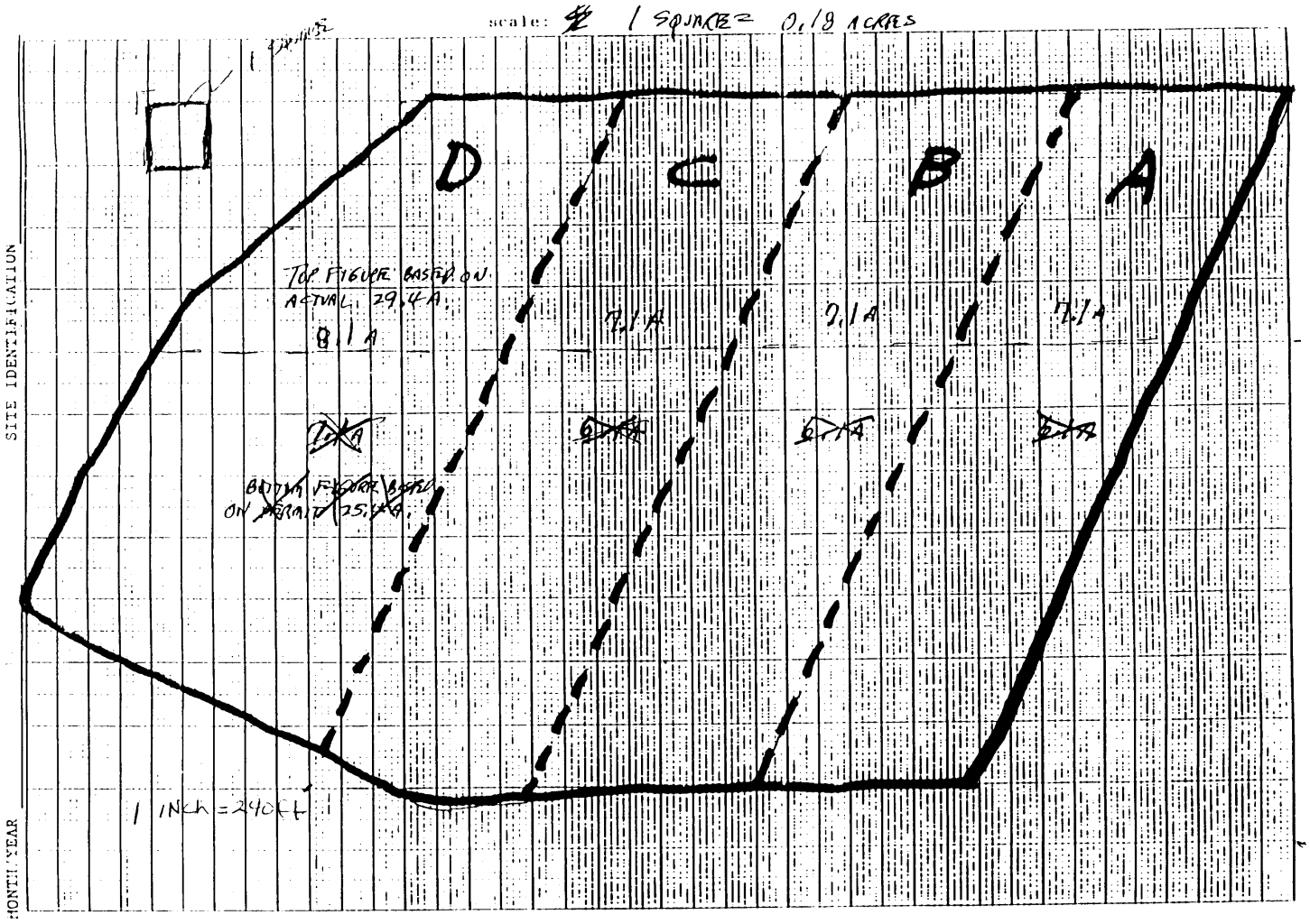
>>Complete and retain this form for each application site used during a report month<<

Month:	SEPTEM	**Year:**	1999
Permittee:	HARTFORD PACKING CO., INC.	**Site ID:**	JACKSON #1
L.A. Permit No. IN LA:	LA000561	**Acres Available:**	29.4

During this month and on the site indicated, **4200000** gallons of water was applied to **29.4** acres of the site's **29.4** total available acres.

Heavy Metal Cumulative Load Summary: *(Enter previous cumulative from last month used)*	Previous Cumulative	Added This Month	New Cumulative
Arsenic cumulative load for this site in pounds:		0.001	0.001
Cadmium cumulative load for this site in pounds:	0.150	0.024	0.174
Copper cumulative load for this site in pounds:	1.987	0.089	2.076
Lead cumulative load for this site in pounds:	1.518	0.066	1.584
Mercury cumulative load for this site in pounds:		0.001	0.001
Nickel cumulative load for this site in pounds:	1.518	0.001	1.519
Selenium cumulative load for this site in pounds:		0.002	0.002
Zinc cumulative load for this site in pounds:	4.767	0.145	4.912


Hartford City East Topo
OLD RAILROAD
Fairgrounds
Little
Willman Cem
Lion Cem
HARTFORD CITY
Hospital
Courthouse
Library
Hoover Park
Water
Fuel
IOOF Cemetery
Sewage Disposal Waterworks
Lake Placid
Southside Cem
CONRAIL
L I C K L N G
Highway Bible


scale: 1 SQUARE = 0.18 ACRES
D
C
B
A
TOP FIGURE BASED ON ACTUAL 29.4A.
8.1A
7.1A
9.1A
7.1A
7.1A
9.1A
9.1A
BOTTOM FIGURE BASED ON PERMIT 25.4A.
1 INCH = 240 FT
SITE IDENTIFICATION
MONTH/YEAR